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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/813,696	03/29/2004	Raghunath Vitthal Chaudhari	3097-4015	6139
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MORGAN & FINNEGAN, L.L.P. 3 WORLD FINANCIAL CENTER NEW YORK, NY 10281-2101				
			EXAMINER ZUCKER, PAUL A	
			ART UNIT 1621	PAPER NUMBER

DATE MAILED: 09/29/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/813,696

Applicant(s)

CHAUDHARI ET AL.

Examiner

Paul A. Zucker

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6,8 and 10-21 is/are rejected.
- 7) ☒ Claim(s) 7 and 9 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 November 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_.

## **DETAILED ACTION**

### ***Information Disclosure Statement***

1. The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609.04(a) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1,2 and 14-21 are rejected under 35 U.S.C. 102(b) as being anticipated by Fitton et al (US 4,124,619 11-1978). Fitton discloses (Column 4, lines 35-47) a process in which a solution of 1,4-diacetoxy-2-butene and hydridocarbonyltris-(triphenylphosphine)rhodium (I) in benzene was heated to 75.degree. C. in a 1 liter stainless steel bomb under a pressure of 2000 p.s.i.g. of synthesis gas (50% by volume H.sub.2, 50% by volume CO). After completion, removal of benzene by distillation from the resulting solution gave 1,4-diacetoxy-2-formylbutane in 77% yield with presumed (since no other product is mentioned) 100% selectivity. Fitton therefore anticipates claims 1,2 and 14-21.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
  2. Ascertaining the differences between the prior art and the claims at issue.
  3. Resolving the level of ordinary skill in the pertinent art.
  4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
3. Claims 1-6, 8 and 10-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fitton et al (US 4,124,619 11-1978) in view of El Ali et al (Abstracts of Papers 224<sup>th</sup> ACS National Meeting, Boston, MA, Hydroformylation and Acetalization of Styrene Derivatives Catalyzed by Rh(III)-phosphite and Rh(III) Supported on MCM-41-phosphite Systems,2002) .

Instantly claimed is process for preparing the esters of  $\gamma$ -hydroxy tiglic aldehyde wherein the catalyst employed is immobilized on a solid support.

Fitton teaches (Column 4, lines 35-47) a process in which a solution of 1,4-diacetoxy-2-butene and hydridocarbonyltris-(triphenylphosphine)rhodium (I) in benzene was heated to 75.degree. C. in a 1 liter stainless steel bomb under a

pressure of 2000 p.s.i.g. of synthesis gas (50% by volume H.sub.2, 50% by volume CO). After completion, removal of benzene by distillation from the resulting solution gave 1,4-diacetoxy-2-formylbutane in 77% yield with presumed (since no other product is mentioned) 100% selectivity.

The difference between the process taught by Fitton and that instantly claimed is that Fitton does not contemplate the use of an immobilized catalyst while such is instantly employed.

El Ali, however, teaches (Abstract, see entire abstract) that Rhodium triphenyl phosphite catalyst can be immobilized using a heteropolyacid as an anchor on the surface of MCM-41 as a solid support and used in a hydroformylation reaction. Although El Ali is silent with regard to where the catalyst attaches the Examiner, presumes, absent evidence to the contrary, that attachment occurs at both inner (entrapment) and outer surfaces. El Ali is also silent with regard to the specific heteropolyacid employed but the Examiner considers El Ali's generic teaching of a heteropolyacid to encompass phosphotungstic and phosphomolybdic acids which are the most well known of the heteropolyacids and are most commonly found to have a Keggin-type structure.

One of ordinary skill in the art would have been motivated to modify the process of Fitton by employing the immobilized catalyst of El Ali by the desire to simplify recovery of the catalyst for reuse in the reaction. An additional advantage would have been the fact that using an immobilized catalyst would allow its removal from

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the product by simple filtration thus simplifying product purification. There would have been a reasonable expectation for success based upon El Ali's teaching that his catalyst was suitable for use in hydroformylation reactions.

Thus the instantly claimed process would have been obvious to one of ordinary skill in the art.

### ***Claim Objections***

4. Claim 7 is objected to because of the following informalities: There appears to be an extraneous comma between the words "phosphorous" and "methane" on line 2. Appropriate correction is required.
5. Claims 7 and 9 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

### ***Allowable Subject Matter***

6. Claims 7 and 9 are drawn to allowable subject matter. The following is a statement of reasons for the indication of allowable subject matter: The closest prior art Fitton et al (US 4,124,619 11-1978) and El Ali et al (Abstracts of Papers 224<sup>th</sup> ACS National Meeting, Boston, MA, Hydroformylation and Acetalization of Styrene Derivatives Catalyzed by Rh(III)-phosphite and Rh(III) Supported on MCM-41-phosphite Systems, 2002) either alone or in combination neither disclose nor fairly suggest process incorporating the instant claim limitations. The instantly claimed processes are therefore patentable over the teachings of Fitton and El Ali, the closest prior art.


**Conclusion**

7. Claims 1-21 are pending. Claims 1-6, 8 and 10-21 are rejected. Claims 7 and 9 are objected to.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul A. Zucker whose telephone number is 571-272-0650. The examiner can normally be reached on Monday-Friday 5:30-2:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Johann R. Richter can be reached on 571-272-0646. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
PAUL A. ZUCKER, PH.D.  
PRIMARY EXAMINER  
